

REMARKS

Reconsideration of this application as amended is respectfully requested. Claims 1, 14, 37 and 44 have been amended without adding new matter. The remarks below in response to claim rejections refer to claims as amended herein. Claims 1-49 remain pending.

Claim Objections

Claims 14-28 and 44-46 have been objected to due to the phrases “a first weighting corresponding to state” and “a second weighting corresponding to state.” Applicant has amended claims 14 and 44 to address the reason for objection and respectfully requests that the objection be withdrawn.

Claim Rejections - 35 U.S.C. § 102

Claims 1-3 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,142,167 to Temple et al. (“Temple”). Applicant submits that claims 1-3 are not anticipated by Temple.

Claim 1 recites, in part:

encoding data values represented by sets of N bits to produce
corresponding sets of M symbols, each of the symbols
representing a plurality of bits, and each set of M symbols being
selected to produce a current flow within a predetermined range of
current flows

Temple discloses a 3/6 binary code for communicating between integrated circuit chips (Temple, col. 3, lines 17-19) and more particularly that the code uses six bits to represent the 16 hex code digits used for computer instructions (Temple, col. 3, lines 19-20). Thus, Temple discloses encoding one sequence of bits into another longer sequence of bits (Temple, col. 5, line 35 - col. 6, line 34; and Figures 3A and 3B). Temple does not disclose or suggest encoding data values represented by sets of N bits to produce corresponding sets of M symbols, each of the symbols representing a plurality of bits, as recited above. Therefore, Temple does not anticipate claim 1, nor claims 2 and 3 which depend from and further limit claim 1.

Claims 6 and 8 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,369,229 to Dorros (“Dorros”). Applicant respectfully disagrees

with this reason for rejection.

Claim 6 recites, in part:

encoding the data element if the current required to transmit the data element is not within the predetermined range of current values

Dorros, by contrast, discloses encoding binary words using one of two code sets selected based on the direct current level of the transmitted signal (Dorros, col. 3, lines 5-37). More specifically, Dorros provides:

"When an N level code word the algebraic sum of the amplitude whose bits is positive is generated, the equipment **after generating the N level code word** switches over to convert the binary words to N level code words in accordance with code set—. The generation of N level codes in accordance with code set—**continues until the direct current level of the transmitted signal is negative**, whereupon conversion is again accomplished by using code set+." (Dorros, col., 4, lines 4-12, emphasis added)

Thus, Dorros discloses encoding a binary word with one of two code sets based on the signal level that results from *previously* encoded binary words, which is not the same as encoding the data element if the current required to transmit the data element is not within the predetermined range of current values, as recited in claim 6. In view of this clear distinction, applicant submits that Dorros does not anticipate claim 6, nor claim 8 which depends from and further limits claim 6.

Claims 37, 39, 41 and 43 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,226,330 to Mansur ("Mansur"). Applicant submits that claims 37, 39, 41 and 43 are not anticipated by Mansur.

Claim 37 recites, in part:

a plurality of multi-level output drivers coupled to a plurality of conductors, each of the multi-level output drivers to output a signal representative of more than a single binary bit onto a respective one of the conductors

Mansur discloses an eigen-mode encoding matrix that may be used to encode N signals onto an N+1 conductor transmission line (Mansur, col. 2, lines 11-13; col. 3, lines 35-59), but does not disclose or suggest the above-recited limitation. Therefore, Mansur does not anticipate claim 37, nor claims 39, 41 and 43 which depend from and further

limit claim 37.

Claim Rejections - 35 U.S.C. § 103

Claims 1, 3-5, 37, 39 and 41-43 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,587,088 to Franaszek (“Franaszek”) in view of U.S. Patent No. 6,005,895 to Perino et al. (“Perino”). Applicant respectfully disagrees with this reason for rejection.

Perino discloses a multilevel signaling system that uses multiple conductors. Franaszek, by contrast, is directed to encoding a binary word in accordance with the state of the signal line on which the encoded binary word itself is to be transmitted (i.e., encoding binary words using a code set selected in accordance with the state of the transmitted signal at the conclusion of the transmission of the preceding word as discussed in Franaszek at col. 1, lines 66-72). Thus, modifying Franaszek as suggested in the Office Action to transmit each symbol on a separate conductor of the multi-conductor signal path of Perino would obviate the very purpose behind the code set selection in Franaszek. Accordingly, applicant submits that even if Franaszek could be modified to use the multi-conductor signal path of Perino as suggested in the Office Action, such modification would render significant structural components of Franaszek (e.g., the circuitry for selecting code set based on state of transmitted signal) unsuitable for their intended purpose and/or change the principle of operation disclosed in Franaszek. Therefore, applicant submits that the suggested combination of Franaszek and Perino does not establish a prima facie case of obviousness with respect to claim 1 (see, for example, MPEP § 2143.01), nor claims 3-5 which depend from and further limit claim 1.

Applicant also notes that merely replicating the circuitry of Franaszek to achieve multiple parallel paths would not meet all the limitations of claim 1 as claim 1 recites “each set of M symbols being selected to produce a current flow within a predetermined range of current flows.”

Applicant submits that, at least for the reasons given with respect to claim 1, the suggested combination of Franaszek and Perino also does not establish a prima facie case of obviousness with respect to claims 37, 39 and 41-43.

Claims 10 and 13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Dorros.

As discussed above with respect to claim 6, Dorros does not disclose or suggest

the following limitation which is incorporated into claims 10 and 13 by virtue of their dependency from claim 6:

encoding the data element if the current required to transmit the data element is not within the predetermined range of current values

Accordingly, applicant submits that, at least for the reasons given above in reference to claim 6, claims 10 and 13 would not have been obvious in view of Dorros.

Claim 9 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Dorros in view of Perino.

Claim 9 also depends from claim 6 and thus also includes the limitation recited above in reference to claims 10 and 13. As discussed, Dorros does not disclose the limitation and Applicant submits that Perino also does not disclose the limitation. Accordingly, even if Dorros and Perino could be combined in the manner suggested in the Office Action, the combination would still lack at least the above-recited limitation and therefore would not have rendered claim 9 obvious.

Allowable Subject Matter

Applicant acknowledges the allowance of claims 29-36 and 47-49.

Applicant also acknowledges that claims 14-28 and 44-46 would be allowable if rewritten or amended to overcome the objections set forth in the Office Action. As applicant has amended the claims to overcome such objections, applicant submits that claims 14-28 and 44-46 are in condition for allowance.

Applicant further acknowledges that claims 7, 11, 12, 38 and 40 have been objected to as dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all the limitations of their respective base claims and any intervening claims. In view of the foregoing remarks regarding rejected claims, applicant respectfully declines to rewrite claims 7, 11, 12, 38 and 40 in independent form at this time.

Conclusion

Applicant respectfully submits that all pending claims are in condition for allowance. If a telephone interview would be helpful in any way, the examiner is invited to call the undersigned attorney.

A petition for a three (3) month extension of time is enclosed herewith.


An information disclosure statement is also enclosed herewith.

Authorization is hereby given to charge deposit account 501914 for any fee deficiency associated with this submission.

Respectfully submitted,

SHEMWELL MAHAMED I LLP

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Charles E. Shemwell, Reg. No. 40,171
Tel. 408-236-6645